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| 10/506,461 | 07/11/2005 | Shigeru Sugaya | SONYJP 3.3-1048 | 8945 |
| 530 7590 12/24/2009 LERNER, DAVID, LITTENBERG, KRUMHOLZ & MENTLIK 600 SOUTH AVENUE WEST WESTFIELD, NJ 07090 | | | | |
| EXAMINER | | | | |
| CASCA, FRED A | | | | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/506,461

Applicant(s)

SUGAYA, SHIGERU

Examiner

FRED A. CASCA

Art Unit

2617

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 15-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 15-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S508)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed September 28, 2009 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 1-13 and 15-25 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Independent claims 1, 6, 11, 15, 19 and 22 have been amended to contain new matter. The phrase "other than when a beacon signal is transmitted by the wireless communication apparatus" added to independent claims 1 and similar limitations added to independent claims 6, 11, 15, 19 and 22 have not been described or found in the specification.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-6, 9-13 and 15-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karaoguz (US 2002/0159544 A1) in view of Watanabe (US Pub. No. 2006/0044436 A1) and further in view of Hong et al (US 6,466,608 B1).

Referring to claim 1, Karaoguz discloses a wireless communication apparatus communicating with another wireless communication apparatus in an autonomous distributed network without a designated control station apparatus (Fig. 1 and par. 5 and 7, “Ad hoc”), said wireless communication apparatus comprising frame period setting means for setting a predetermined frame period for each wireless communication apparatus (par. 40, “settings for received frames”); data slot setting means for setting slots serving as data transmission units (par. 63, “time slots”); and reception slot setting means for setting at least one reception slot for receiving a signal in said predetermined frame period (par. 63, “slots”, note that slots are used. Thus, signals are transmitted and also received in slots which implies that slots have been set for receiving).

Karaoguz does not specifically disclose scan period setting means for setting a scan period longer than said predetermined frame period.

Watanabe discloses that a scan period and frame period can be varied (Fig. 6 and paragraph 58, “1H represents one horizontal scan period, and 1V represents one frame period”).

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the apparatus of Karaoguz by incorporating the teachings of Watanabe, for the purpose of providing flexibility in assigning scanning time, thus efficient use of communication resources.

The above combination does not specifically disclose beacon scan means for setting a beacon scan period over a time of the predetermined frame period other than when a beacon signal is transmitted by the wireless communication apparatus.

Hong discloses beacon scan means for setting a beacon scan period over a time of the predetermined frame period other than when a beacon signal is transmitted by the wireless communication apparatus (Figures 3A-3B, 5, col. 10, lines 1-35, “beacon scan time”, “listen timeout”, note that “the beacon scan time” is the designated time for scanning the beacon signals. Thus, the scanning wireless node would commonly only scan beacon signals at this “beacon scan time” other than randomly whenever a beacon signal is transmitted from another wireless node).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the above combination, such that a beacon scan period is set to scan during the scan time of Hong over a time of the predetermined frame period of Karaguz other than when a beacon signal is transmitted by the wireless communication apparatus, for the purpose of managing operations of the wireless apparatus more efficiently.

Referring to claim 2, the combo of Karaoguz/Watanabe/Hong discloses the wireless communication apparatus as set forth in claim 1, further comprising transmitting means for transmitting a beacon signal to another wireless communication apparatus at a predetermined timing of said predetermined frame period (par. 64, "beacon is transmitted"), wherein the beacon signal has information about a timing (inherent as signals are synchronized) of the reception slot set by said reception slot setting means; and receiving means for receiving a signal transmitted by said another wireless communication apparatus (par. 64).

Referring to claim 3, the combo of Karaoguz/Watanabe/Hong discloses the wireless communication apparatus as set forth in claim 2, wherein said receiving means receives the signal at a timing of the reception slot set by said reception slot setting means (Fig. 4B-4C and par. 63-64).

Referring to claim 4, the combo of Karaoguz/Watanabe/Hong discloses the wireless communication apparatus as set forth in claim 1, further comprising beacon transmitting means for transmitting a beacon signal at a timing of a head of the predetermined frame period (Fig. 4B-4C and par. 63-64).

Referring to claim 5, the combo of Karaoguz/Watanabe/Hong discloses the wireless Communication apparatus as set forth in claim 1, further comprising data transmitting means for transmitting data to another wireless communication apparatus (Fig. 1), storage means for storing timings of reception slots of other wireless communication apparatuses (par. 7, "synchronization"), and control means for making said data transmitting means transmit data at a timing of a reception slot of said another wireless communication apparatus when there is

transmission data to be sent to the other wireless communication apparatus (Fig. 1 and 4A-4C and par. 7, 63-64 and).

Claims 11-13 recite features analogous to features of claims 1-3, thus they are rejected for the same reasons made in the rejection of claims 1-3.

Referring to claim 6, Karaoguz discloses a wireless communication apparatus for communicating with another wireless communication apparatus in an autonomous distributed network without a designated control station apparatus (Fig. 1 and par. 5 and 7, “Ad hoc”), said wireless communication apparatus comprising frame period setting means for setting a predetermined frame period by for each communication apparatus(par. 40, “settings for received frames”); data slot setting means for setting slots serving as data transmission units (par. 63, “time slots”); scanning means for receiving a beacon signal transmitted from another wireless communication apparatus over a time of said predetermined frame period (Fig. 1 and 4A-4C, note that scanning for beacon signals is inherent in wireless communication).

Karaoguz does not specifically disclose scan period setting means for setting a scan period longer than said predetermined frame period.

Watanabe discloses that a scan period and frame period can be varied (Fig. 6 and paragraph 58, “1H represents one horizontal scan period, and 1V represents one frame period”).

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the apparatus of Karaoguz by incorporating the teachings of Watanabe, for the purpose

of providing flexibility in assigning scanning time, thus efficient use of communication resources.

The above combination does not specifically disclose beacon scan means for setting a beacon scan period over a time of the predetermined frame period other than when a beacon signal is transmitted by the wireless communication apparatus.

Hong discloses beacon scan means for setting a beacon scan period over a time of the predetermined frame period other than when a beacon signal is transmitted by the wireless communication apparatus (Figures 3A-3B, 5, col. 10, lines 1-35, "beacon scan time", "listen timeout", note that "the beacon scan time" is the designated time for scanning the beacon signals. Thus, the scanning wireless node would commonly only scan beacon signals at this "beacon scan time" other than randomly whenever a beacon signal is transmitted from another wireless node).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the above combination, such that a beacon scan period is set to scan during the scan time of Hong over a time of the predetermined frame period of Karaguz other than when a beacon signal is transmitted by the wireless communication apparatus, for the purpose of managing operations of the wireless apparatus more efficiently.

Referring to claim 9, the combination of Karaoguz/Watanabe/Hong disclose the wireless communication apparatus as set forth in claim 6, and further disclose beacon transmitting timing control means for controlling a timing of transmission of its own beacon so as not to collide with the beacon of the other wireless communication apparatus, wherein the scanning means receives

a beacon from another wireless communication apparatus (Fig. 1 and 4A-4B and their corresponding discussions).

Referring to claim 10, the combination of Karaoguz/Watanabe/Hong discloses the wireless communication apparatus as set forth in claim 6, and further disclose transmitting means for transmitting a beacon signal at a predetermined timing of the frame period, wherein the beacon signal has information relating to a beacon transmitting slot transmitted from another wireless communication apparatus obtained by said scanning means (Fig. 1 and 4A-7C and their corresponding discussions).

Referring to claim 15, claim 15 defines a wireless communication method reciting features analogous to the features of the apparatus of claim 6, thus it is rejected for the same reasons used in the rejection of claim 6.

Referring to claim 16, the combination of Karaoguz/Watanabe/Hong discloses the wireless communication method as set forth in claim 15, further comprising transmitting a beacon signal that has information about the a timing of the set reception slot and informing its presence to another wireless communication apparatus located in the neighborhood (Fig. 4A-4C, and par. 63-64).

Referring to claim 17, the combination of Karaoguz/Watanabe/Hong discloses the wireless communication method as set forth in claim 15, further comprising having a wireless communication apparatus that engages in reception processing at a timing of said set reception slot and receives data transmitted from another wireless communication apparatus (Fig. 1 and 4B-4C).

Claim 18 recites features analogous to the features of claim 4. Thus, the combination of Karaoguz/Watanabe/Hong discloses all elements of claim 4.

Referring to claims 19 and 22, claims 19 and 22 defines a wireless communication method reciting features analogous to the features of the system of claim 6, thus the combination of Karaoguz/Watanabe/Hong discloses all elements of claim 19 and 22 (please see the rejection of claim 6 above).

Referring to claim 20, the combination of Karaoguz/Watanabe/Hong discloses the wireless communication method as set forth in claim 19, and further discloses a step of managing a timing of the reception of the beacon signal transmitted from said other wireless communication apparatus and a timing of the reception slot (Fig. 1 and 4B-4C and par. 7).

Referring to claim 21, the combination of Karaoguz/Watanabe/Hong discloses the wireless communication method of claim 19 and further disclose storing a timing of a beacon signal from another Wireless communication apparatus located in the neighborhood and a timing of the reception slot and engaging in a transmitting operation at a timing of the reception slot of the another communication apparatus when there is data destined for the another wireless communication apparatus (Karaoguz, Fig. 1-4C, and par. 7).

Referring to claim 23, the combination of Karaoguz/Watanabe/Hong discloses the wireless communication method of claim 22 and further disclose receiving a beacon signal of another wireless communication apparatus located in the neighborhood, managing a timing of the reception of said beacon signal and a timing of the reception slot (Fig. 1-4C), and

transmitting a signal at the timing of the reception slot of the corresponding wireless communication apparatus when communicating directed to the another wireless communication apparatus (Par. 7-8 and 63-64 and Fig. 1-4C).

Referring to claim 24, the combination of Karaoguz/Watanabe/Hong disclose the wireless communication method of claim 22 and further disclose the step of receiving a beacon from another wireless communication apparatus by said scanning processing and controlling a timing of transmission of its own beacon so as not to collide with the beacon of the other wireless communication apparatus (Par. 7-8 and 63-64 and Fig. 1-4C).

Referring to claim 25, the combination of Karaoguz/Watanabe/Hong disclose the wireless communication method of claim 22 and further disclose the step of transmitting a beacon signal at a predetermined timing of the predetermined frame period, wherein the beacon signal has information relating to a beacon transmitting slot transmitted from another wireless communication apparatus obtained by said scanning processing (Par. 7-8 and 63-64 and Fig. 1-4C).

6. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karaoguz (US 2002/0159544 A1) in view of Watanabe (US Pub. No. 2006/0044436 A1) further in view of Hong et al (US 6,466,608 B1), and further in view of well known prior art (MPEP 2144.03).

Referring to claim 7, the combination of Karaoguz/Watanabe/Hong discloses the wireless communication apparatus as set forth in claim 6, further comprising transmitting means for transmitting a signal at the timing of the reception slot of the corresponding wireless

communication apparatus when there is data directed to another wireless communication apparatus (Fig. 1A, and col. 5, lines 20-45, “communications between nodes of different islands”).

The combination does not disclose managing means for converting a timing of said received beacon signal and a timing of the reception slot into its own slot positions and managing same.

The examiner takes official notice of the fact that converting a timing of a received beacon signal and a timing of the reception slot into its own slot positions and managing same is well known in the art particularly in dynamic slot allocation schemes.

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the combination for the purpose of providing allocating resources efficiently.

Referring to claim 8, the combination of Karaoguz/Watanabe/Hong and Well-known art disclose the wireless communication apparatus as set forth in claim 7 and further disclose control means for making transmitting means transmit a signal at the timing of the reception slot of the corresponding wireless communication apparatus when there is data directed to the other wireless communication apparatus, the scanning means obtaining the timing of the beacon signal and the timing of the reception slot from said other wireless communication apparatus (Fig. 1A-7B and their corresponding discussions).

Response to Arguments

7. Applicant's arguments with respect to claims 1-13 and 15-25 have been fully considered but they are moot in view of new grounds of rejection.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred A. Casca whose telephone number is (571) 272-7918. The examiner can normally be reached on Monday through Friday from 9 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Harper, can be reached at (571) 272-7605. The fax number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Fred A. Casca/

Examiner, Art Unit 2617

/VINCENT P. HARPER/

Supervisory Patent Examiner, Art Unit 2617